

ever our author builds upon his basis would seem to have an unstable foundation.

We have just mentioned the excellent bibliography of the swallow-question given by Dr. Coues, but this is by no means the only one contained in his work. By way of appendix we have a "List of Faunal Publications relating to North American Ornithology," with a most useful double index (of authors and localities) thereto, the whole extending over more than 200 pages. The like of this we know not elsewhere, and we cannot sufficiently thank him for it. It makes us forget and forgive the single *escapade* which we so much regret having had to notice. One remarkable merit it possesses is that except in specified cases—and these, it is easy to see, are very few in number—no title has been taken at second-hand. More than this, we are told that the present batch of titles is but an instalment of a Universal Bibliography of Ornithology which the author has in hand, and towards which he has already collected about 18,000 titles! We are sure our readers will agree with us in hoping that Dr. Coues will be able to complete his laborious task, as well as in considering that its completion will redound to the already great credit of the department over which Dr. Hayden presides, and also to the medical staff of the United States army, which numbers Dr. Coues among its members.

BRITISH BURMA

British Burma and its People. By Capt. C. J. F. S. Forbes, F.R.G.S., M.R.A.S., &c. (London: John Murray, 1878.)

THIS book is offered as the result of thirteen years' experience derived from close intercourse, both officially and privately, with the people of Burma during that period. Such works are frequently contributed by the pro-consuls of the British empire, and afford, apart from their scientific value, good material to judge of the men and methods of our colonial government. Their merits are naturally unequal. The volumes of Raffles and Tennent, become classical, supply the corner-stones of future compilations, and are the exciting causes of a more ephemeral literature. It is, however, seldom that we see combined with the administrative capacities of our governors and commissioners a thorough knowledge of the ethnology, biology, and physical characteristics of the regions over which they preside. When such a man appears, and further possesses the quality of observation, his work marks an epoch, and English rule receives a new significance. It is in no adverse spirit that we say thus early that Capt. Forbes' work will not rank in this category, and we desire rather to commend it for what it does possess than to criticise it for the information which it does not supply.

Omitting the long narrow strip of mountainous country and sea-coast which forms the Tenasserim province below Maulmain, British Burma may, roughly speaking, be said to consist of three broad mountain ranges, having outside them on the west the sea-board province of Arracan, embracing between them the two great valleys of the Irrawaddy and the Sittoung, which forms, south of Rangoon, one vast plain, the centre range of the three mountain chains being shorter than are the other two.

Its physical geography is interesting and peculiar, and in its pluvial character most characteristic and remarkable. The wet season lasts from about May to October, and during these five months of almost constant rain the average rainfall amounts to 184 inches at Maulmain,—in one exceptional year to 228 inches. During this period the great Irrawaddy rises 40 feet above its summer level and floods the surrounding lowlands, whilst its main current travels with a velocity of five miles an hour. Many proposals have been made to found sanatoriums for Europeans on the high mountain ranges of Burma, but however pleasant in summer, they would, says Capt. Forbes, "have to be abandoned to the jungle beasts and the elements during the rains, for not even natives could remain to take care of the buildings; and so incredibly rapid and luxurious is vegetation there, that the very next year a forest would have to be cleared away to find the houses again." December, January, and February are the cold months, whilst the hot weather lasts from February till the rains commence again. The climate, however, is excellent; the registration returns show that the deaths of children under five years of age are in the proportion of 27·85 of the total death rate; the percentage of children under twelve years of age is 35·8 of the whole population.

The chapter on the physical geography of the region is evidently compiled from careful authorities. The author appears to have undertaken no original investigations, nor to have added any original information on the subject; the biological effects of these annual inundations, in such a region teeming with animal life, excite the profoundest interest, but await the chronicle of a qualified observer. The principal part of the volume is occupied with an account of the people of British Burma, which the sociologist may find a storehouse of useful facts, and which must prove of the greatest value as an introduction to the ethnology of the region to all such as are approaching that subject. The statistical tables of the Census Report for British Burma, 1872, "give eighteen divisions of the indigenous races of so-called Mongolian origin." According to Capt. Forbes four great races occupy the Burman peninsula—the Mōn, the Karen, the Burman, and the Tai, or Shan, of which the Mōns form the majority of the inhabitants of British Burma. As regards the author's endeavour to give "a probable account of the route and order by which they arrived in their present localities," we must refer the reader to his arguments, and, without expressing an opinion thereon, will merely remark that even in science, when the rigour of induction is at all relaxed, a sentence written by Mr. Leslie Stephen is very applicable—"one clever man's guess is as good as another, whatever the period at which he lived." The chapters devoted to "social life and manners," &c., are very valuable to the comparative ethnologist. Some of these facts have been related before, but collected thus in a compendious form, and enriched with the results of a long official experience, they form material to supply links in that chain of generalisations which during the last few years in the hands of Tylor and Lubbock have created a new branch of anthropology.

Among the hill tribes the Karens are now divided between "those who have permanently settled in the plains and betaken themselves to a regular system of agriculture

and those who still remain in all their primitive freedom of the hills." This freedom, however, consists of a long and bitter struggle to raise their scanty crops on the hardly-wrought clearances of the virgin forest. Among the other enemies to their agricultural pursuits, Capt. Forbes mentions the visitations of vast hordes of "hill rats," which at long intervals of forty or fifty years settle on a tract of country for two or three years in succession, "till, like a swarm of locusts, they have reduced it to a desert." When on the move, in vast swarms, they cross the streams in shoals, so that the water is black with them, and from 1870 to 1874 they so devastated the hill country east of the Sittoung river that government was compelled to expend some 10,000*l.* in relieving the local Karen tribes.

The chapters upon Burman Buddhism must not pass without notice. Buddhism is not a subject quite suitable to the columns of NATURE, but there is exhibited in the short treatment of it such an intelligent appreciation of a vast system of philosophy, unaccompanied by narrow prejudice or preconceived ideas, as, if not perfect, proves the author to be capable of conducting investigations on thoroughly scientific principles.

W. L. D.

OUR BOOK SHELF

From Kulja, across the Tian Shan, to Lob-Nor. By Col. N. Prejevalsky. Translated by E. Delmar Morgan. With Introduction by Sir J. Douglas Forsyth, C.B. (London: Sampson Low and Co., 1879.)

COL. PREJEVALSKY has already proved himself one of the most scientific and determined of modern explorers, and has probably done more than any single man for an accurate knowledge of Central Asia. We have noticed in these pages his valuable work on his journey in Mongolia and Western China, and this narrative, short as it is, maintains the reputation he has already gained. The journey here described was made in 1876-7, and has been the means of clearing up several obscurities in the hydrography of the region visited. We have already, shortly after Prejevalsky's return, given the main results of the journey, from Kulja, south-east across the Tian Shan Mountains, by the Yulduz River, to the Tarim, and along that river to its termination in Lake Lob-nor, at the northern foot of the Altyn-tagh Range, on the 90th deg. of E. long., and just south of the 40th parallel N. Baron von Richthofen has endeavoured to prove that the present Lob-nor is not the Lob-nor of the old geographers, which he maintains was farther north. But to this Prejevalsky has an answer that it seems to us difficult to refute, notwithstanding that Richthofen probably knows more about the history of Central Asian geography than any one living. However the case may stand with regard to this, there can be no doubt about the value of Prejevalsky's observations on the present Lob-nor, which he states is fresh, shallow, almost overgrown with tall reeds, in the midst of which its strange mongrel inhabitants live, and of which they build their houses. The Altyn-tagh Mountains Richthofen considers the most surprising discovery of the Russian traveller, for it was generally supposed that there was an extensive tract of low country continuing through several degrees of latitude to the south of the lake. Prejevalsky's observations on the fauna of the Tarim and Lob-nor will be appreciated by zoologists, as will also his account of the wild camel. He has a special interest in ornithology, and above all in that department relating to the migrations of birds; and the part of his narrative which de-

scribes what he observed on this point during his stay at Lob-nor is one of exceptional value, and will, no doubt, be read with interest and profit by those who take an interest in the subject of migration. Mr. Delmar Morgan, who has made an excellent translation, has added to the brief narrative chapters on Lake Balkash, Lake Ala-Kul, and the Starovertsi, which, though somewhat irrelevant, are acceptable as being of real value. An excellent large map accompanies the volume, besides a smaller one, to illustrate the controversy between Prejevalsky and Richthofen.

A Manual of Practical Chemistry: The Analysis of Foods and the Detection of Poisons. By Alexander Wynter Blyth, M.R.C.S., F.C.S., &c. (London: Charles Griffin and Co., 1879.)

THIS work of 468 pages consists of two divisions, the first treating of the analysis of the principal articles of diet in daily use, the second of the detection and estimation of certain organic and inorganic poisons. The matter pertaining to the first division is further divided into seven parts, in which the different articles of diet are considered in their proper groups. These chapters are well and pleasantly written, bringing the information as much as possible up to date, and introducing where necessary modern methods of analysis. This may be seen in the chapter on sugars, where a full description of the optical method for the estimation of these bodies by the polariscope is given, with an accompanying diagram of the various parts, lenses, &c., of Soleil's saccharimeter. The remaining portions of the first division contain the matter concerning bread and flour; milk, butter, tea, coffee, cocoa, &c.; the chapter on tea and coffee containing a large number of analyses which no doubt will prove of great use. A considerable part of the book is devoted to the examination of alcohols, wines, and beers, in which instructions are laid down for the examination of such substances. In connection with this part the author gives a reprint of the tables introduced by M. A. Gautier for the systematic detection of colouring matters likely to be met with in wines, and gives an abstract of Gautier's paper containing the necessary instructions for the preparation of the sample, &c., to be examined.

The second division of the book contains the detection and estimation of the different poisons, the consideration of the organic preceding that of the inorganic. Although the information conveyed by the author is exact and well arranged with regard to the individual tests for each separate poison, it is to be regretted that he has not thought it necessary to develop more fully his remarks on a systematic course to be employed in the separation of the different poisons from each other. In many cases where doubtful evidence of poisoning exists a most exhaustive analysis is required, and we fear the general instructions laid down in the book for this purpose, or "method of procedure in analysis," as the author terms it; are somewhat insufficient.

The organic poisons and the detection of phosphorus are first taken into account in two divisions, first, those detected mainly by methods of distillation, and second, those separated for the most part by alcoholic solvents. The consideration of mineral poisons is placed last in the book, and contains the usual received tests for these substances, with in some cases a description of the body. With regard to this latter part we do not see why in a book published so recently as 1879 there are no remarks on the detection or separation of tin as a poison since it has been shown in letters to some of the journals that this metal may contaminate articles of food, more especially tinned fruits.

The work is clearly printed, but some of the diagrams are somewhat crudely cut, and if refinement in the arrangement of apparatus is intended in the illustrations, hardly carry out the intention; thus in Fig. 15 it is diffi-